FACILITY STATUS CHANGE FORM

Date Submitted:	Area:	Control #:
Feb 14, 2013	100-N	D4-100N-0047
Originator:	**Facility ID:**	
David Warren	105-NE Fission Products Trap	
Phone:	**Action Memorandum:**	
539-6040	100-N Ancillary Facilities	

This form documents agreement among the parties listed below on the status of the facility D&D operations and the disposition of underlying soil in accordance with the applicable regulatory decision documents.

Section 1: Facility Status

☐ All D4 operations required by action memo complete.

☒ D4 operations required by action memo partially complete, remaining operations deferred.

Description of Completed Activities and Current Conditions:

Deactivation: Utility isolation was performed at the facility prior to beginning deactivation.

Decontamination and Decommissioning: If present, the following hazardous materials were removed prior to facility demolition: batteries, light bulbs, oils, grease, asbestos-containing material, mercury, refrigerant, and polychlorinated biphenyls. Hazardous material removal and waste disposition was performed in accordance with the *Removal Action Work Plan for 100-N Area Ancillary Facilities*, DOE/RL-2002-70. The 105-NE Fission Products Trap contained radiologically-contaminated water, which was not removed prior to demolition, but was fixed in place prior to demolition with zeolite, bentonite clay, and grout.

Demolition: Demolition of the 105-NE Fission Products Trap was completed by April of 2012. Demolition debris was loaded into roll-off containers and transported to the Environmental Restoration Disposal Facility (ERDF) where it was disposed.

Description of Deferral (as applicable):

Additional cleanup and subsequent closeout of the 105-NE Fission Products Trap footprint is deferred to be performed in conjunction with closeout of Waste Information Data System (WIDS) site 100-N-66, which is the 105-N/109-N Reactor Building Complex.

Section 2: Underlying Soil Status

☐ No waste site(s) present. No additional actions anticipated.

☒ Documented waste site(s) present. Cleanup and closeout to be addressed under Record of Decision.

☐ Potential waste site discovered during D4 operations. Waste site identification number <to be> assigned.

Cleanup and closeout to be addressed under Record of Decision.

Description of Current/As-Left Conditions:

The 105-NE Fission Products Trap has been demolished, excavated, and disposed at the ERDF. The excavation boundary has been documented in a post-demolition Global Positioning System (GPS) survey. Although no anomaly was encountered during demolition, multiple points of radiological contamination were detected within the 105-NE footprint during post-demolition Global Positioning Environmental Radiological Surveyor (GPERS) surveys. All pertinent GPERS survey maps are included in Attachment 3 and all pertinent GPS survey maps are included in Attachment 4.

Identification of Documented Waste Site(s) or Nature of Potential Waste Site Discovery (as applicable):

The footprint of the 105-NE Fission Products Trap lies adjacent to existing WIDS site 100-N-66. Accordingly, and as the deferral option has been selected for the 105-NE facility footprint, the contamination remaining within the 105-NE facility footprint will be addressed as part of WIDS site 100-N-66.

The usage of a Sampling Determination Form is part of a process implemented by the *Removal Action Work Plan for*

FACILITY STATUS CHANGE FORM

100-N Area Ancillary Facilities, DOE/RL-2002-70, Revision 3. The Sampling Determination Form for the 105-NE Fission Products Trap (SDF-100N-022, Rev.1) represents a regulatory agreement between DOE and the Lead Regulator (Ecology), and indicates that the requirements of the Action Memorandum have been met with respect to demonstrating that cleanup criteria, MTCA Method B for Chemical Constituents and 15 mRem above Hanford Site background for Radiological Constituents, have been achieved for soils and structures remaining after facility removal. No further action will be required by the D4 organization to demonstrate that cleanup criteria have been met for the 105-NE Fission Products Trap. However, additional actions will be performed for closeout of the 100-N-66 WIDS site, which will address the radiological contamination remaining within the 105-NE footprint.

Section 3: List of Attachments

1. Facility Information
2. Photographs
3. GPERS Surveys
4. GPS Surveys
5. Sampling Determination Form for the 105-NE Fission Products Trap (SDF-100N-022, Rev. 1)

DOE-RL	Date 3/4/13
Lead Regulator ☐ EPA ☒ Ecology	Date 3/13/13

DISTRIBUTION:

EPA: Dennis Faulk, B1-46
Ecology: Rick Bond, H0-57
DOE: Rudy Guercia, A3-04
Document Control, H0-30
Administrative Record, H6-08 (100-NR-1 OU)

SIS Coordinator: Benjamin Cowin, H4-22
D4 EPL: David Warren, X9-08
Sample Design/Cleanup Verification: Theresa Howell, H4-22
FR Engineering: Rich Carlson, N3-30
FR EPL: Dan Saueressig, N3-30

Attachment 1: Facility Information (5 pages)

D4 Project Facility Completion Form

Facility Information

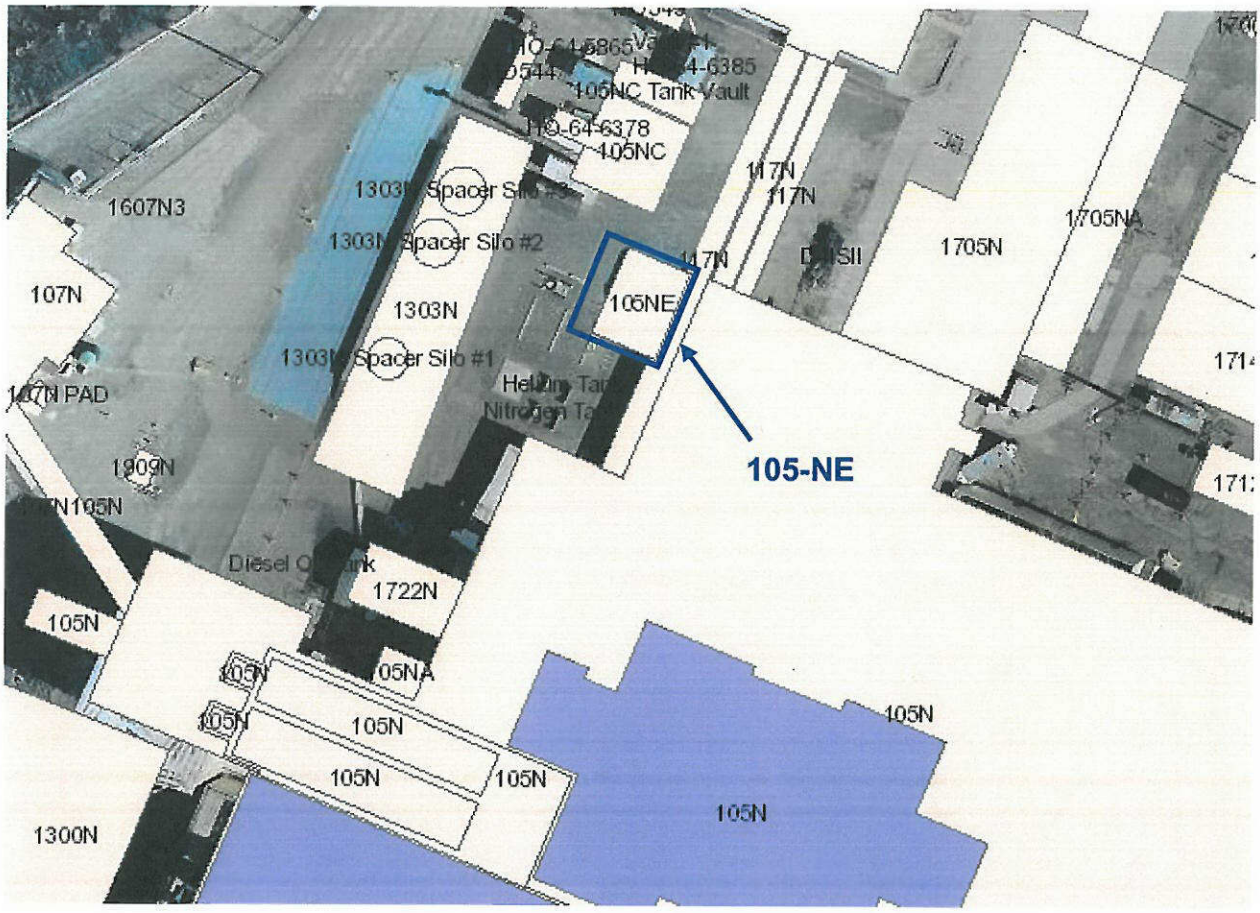
Introduction

This document provides information regarding the history, characterization, and final status at the completion of deactivation, decontamination, decommissioning, and demolition activities of the 105-NE Fission Products Trap, formerly located at the 100-N Area.

Site Information

The 105-NE Fission Products Trap was a 17-foot by 19-foot reinforced-concrete structure that was built in 1963. It extended from approximately 30 feet below grade to 5 feet above grade and was capped with a steel plate that served as an above-grade access point. The facility contained a set of risers that elevated drainage received from the 105-N Reactor 24-inch low-pressure flush line and the 12-inch low-pressure diversion effluent line. The set of risers was designed to capture solids contained within the drainage, which would then be deposited into a storage cask within the Fission Products Trap structure. A map of the 105-NE Fission Products Trap is included in Figure 1. Photographs are included in Attachment 2.

Figure 1: Location of the 105-NE Fission Products Trap



Radiological and Industrial Hygiene Scoping Surveys

No radiological scoping survey was performed at the 105-NE Fission Products Trap. Industrial hygiene scoping surveys were, however, performed at the 105-NE Fission Products Trap in 2006. The resulting determination from these surveys was that the 105-NE Fission Products Trap contained no unique industrial hygiene hazard as long as the sludge at the bottom of the facility remained wet, as it contained a variety of metals. Additionally, the 105-NE Fission Products Trap underwent characterization sampling in 2011 and was subsequently determined to be a beryllium-clean facility.

Post-Demolition Radiological Surveys

Radiological contamination was detected during multiple radiological surveys performed at the 105-NE Fission Products Trap. Accordingly, the facility was maintained under radiological controls both before, and during, demolition and below-grade excavation.

Post-demolition Global Positioning Environmental Radiological Surveyor (GPERS) surveys were performed at the footprint of the 105-NE Fission Products Trap in December of 2012. Residual radiological contamination was detected during these surveys. The GPERS survey maps are included in Attachment 3 and are summarized in Table 1 below.

Table 1: Summary of Post-Demolition Radiological Surveys

Type	Quantity	Method Detection Limits	Results
GPERS Surveys	2 Surveys	N/A	A total of 9,369 data points were taken at the soil within, and within the vicinity of, the 105-NE facility footprint. Multiple data points were found to exceed 1.5 times the background radiological count. It should be noted that readings from this location that do not exceed 1.5 times the background count are considered to be insignificant. The GPERS survey maps are included in Attachment 3.

Facility & Waste Characterization Sampling

No potential asbestos-containing material was identified during an asbestos inspection performed at the 105-NE Fission Products Trap in May of 2006. Accordingly, no asbestos-related samples were taken from the 105-NE Fission Products Trap.

Characterization sampling was performed at the 105-NE Fission Products Trap in order to determine the acceptability of material disposal at the Environmental Restoration Disposal Facility (ERDF). Table 2 below summarizes the samples that were taken for such waste management purposes.

Table 2: Summary of Waste Management Samples

Sample #	Sample Date	Logbook Reference	Location	Material
J12669	5-18-06	EL-1516-10, pp. 11-13	105-NE	Semi-Solid Sludge
J1NJW0	2-9-12	EL-1516-19, pp. 50-52	105-NE	White Fibrous Solid from Excavation Soil
J1NJW1	2-9-12	EL-1516-19, pp. 50-52	105-NE	White Fibrous Solid from Excavation Soil
J1NJW2	2-9-12	EL-1516-19, pp. 50-52	105-NE	White Fibrous Solid from Excavation Soil

Demolition

The above-grade and below-grade portions of the 105-NE Fission Products Trap were demolished and excavated between November of 2011 and April of 2012. Facility debris was loaded into roll-off containers and then sent to the ERDF for disposal.

Contaminants of Concern

Radionuclides were the only contaminants of concern for demolition of the 105-NE Fission Products Trap.

Civil Survey Information

A pre-demolition Global Positioning System (GPS) survey was performed at the 105-NE Fission Products Trap in March of 2006. A post-demolition GPS survey was performed at the 105-NE Fission Products Trap excavation in December of 2012. Copies of these GPS surveys are provided in Attachment 4.

Anomalies

No anomaly was encountered during demolition or excavation of the 105-NE Fission Products Trap.

Status of Associated/Adjacent WIDS Sites

Table 3 below provides information on the WIDS sites that were associated with, and/or adjacent to, the 105-NE Fission Products Trap.

Table 3: Associated/Adjacent WIDS Sites for 105-NE

Site Number	Site Name	Description & Classification/Reclassification Statuses	Removal Status
100-N-63:2 (subsite)	Pipelines Between 109N, 105N, 107N, 1310N, 1322N, 1926N; and 36" Process Drain to Outfall	This subsite consists of the treatment, storage, and disposal (TSD) pipelines that transported reactor cooling water, radioactive liquid waste, and chemical liquid waste from the 105-N Reactor facilities to the 116-N-1 Crib and the 100-N-77 effluent pipeline; and the 36 inch process drain that emptied into the 100-N-77 effluent pipeline. Classification: Accepted	The portion of this subsite that was located within the 105-NE excavation footprint was completely removed during removal of the 105-NE facility.
100-N-66	105-N/109-N Reactor Building Complex	This site consists of the 105-N Reactor Building and the 109-N Heat Exchanger Building. Classification: Accepted	This site was not affected during removal of the 105-NE facility. Of both buildings that comprise this WIDS site, only the 105-N Reactor Building was adjacent to the 105-NE Fissions Product Trap. The adjacent portion of the 105-N Reactor Building was demolished before demolition of the 105-NE Fissions Products Trap began.
100-N-84:3 (subsite)	100-N Area Filter and Potable Water Pipelines	This subsite consists of pipelines used for transporting makeup water, filter water, demineralized water, and potable water. Classification: Accepted Reclassification: No Action	This subsite was not affected during removal of the 105-NE facility. As this subsite has received a No Action reclassification status, no remedial action is expected for any remaining portion of the subsite.
100-N-84:5 (subsite)	100-N Area Sanitary Pipelines	This subsite consists of pipelines used for transporting sanitary water, sewer water, storm drain water, and disposal field water. Classification: Accepted	The portion of this subsite that was located within the 105-NE excavation footprint was completely removed during removal of the 105-NE facility.
UPR-100-N-39	Corridor 22 Suspect Liquid Unplanned Release	This site consisted of soil and concrete outside the Corridor 22 doorway, on the west side of the 105-N Reactor Building, that received an unplanned release of several hundreds of liters of radioactively-contaminated scrub water from the 105-NE Fission Products Trap. Classification: Accepted	This site was not affected during removal of the 105-NE facility.

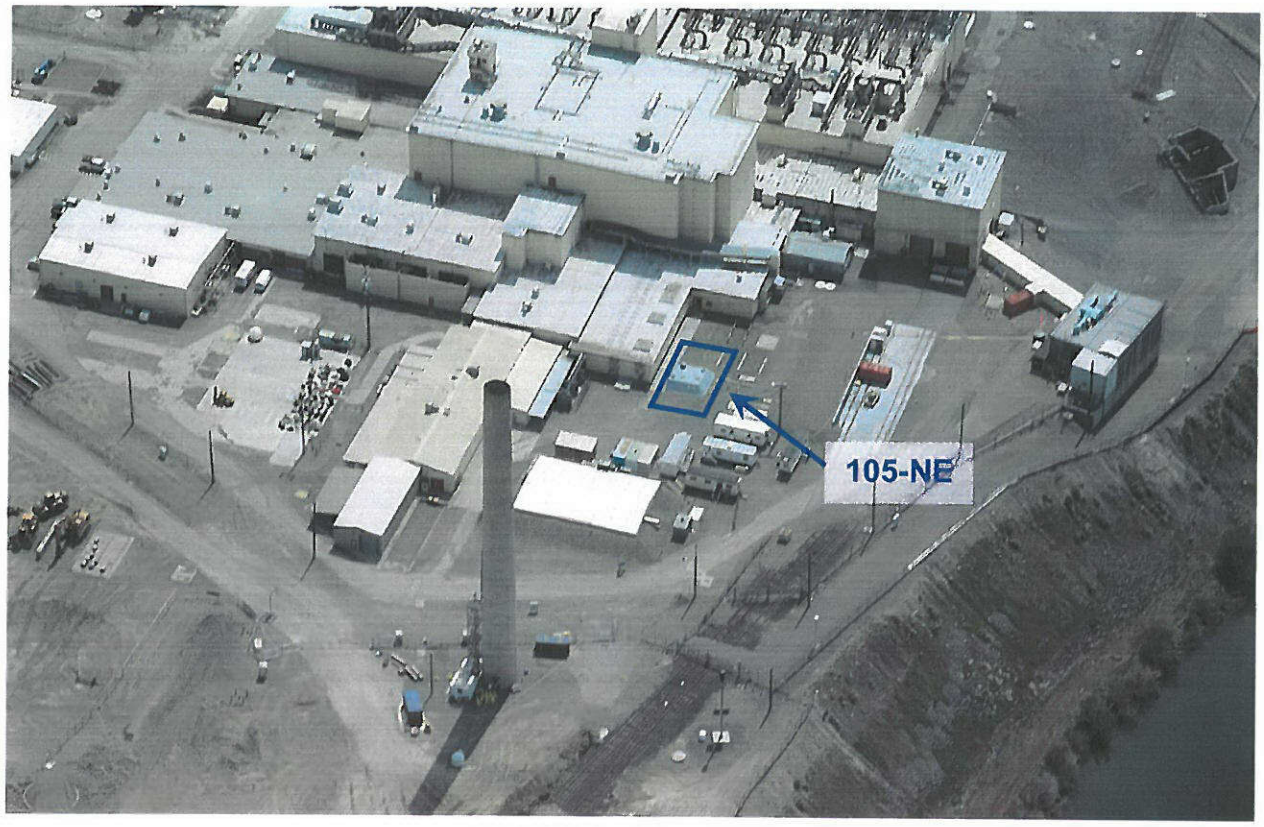
Final Building Status and Underlying Soil

The 105-NE Fission Products Trap was entirely demolished by April of 2012. The resulting debris was shipped to the ERDF, where it was disposed.

No physical components of any WIDS site or WIDS subsite remains within the excavation footprint of the 105-NE Fission Products Trap. The extent of the excavation was documented with a post-demolition GPS survey, which is provided in Attachment 4. No anomaly or stained patch of soil was encountered during demolition of this facility.

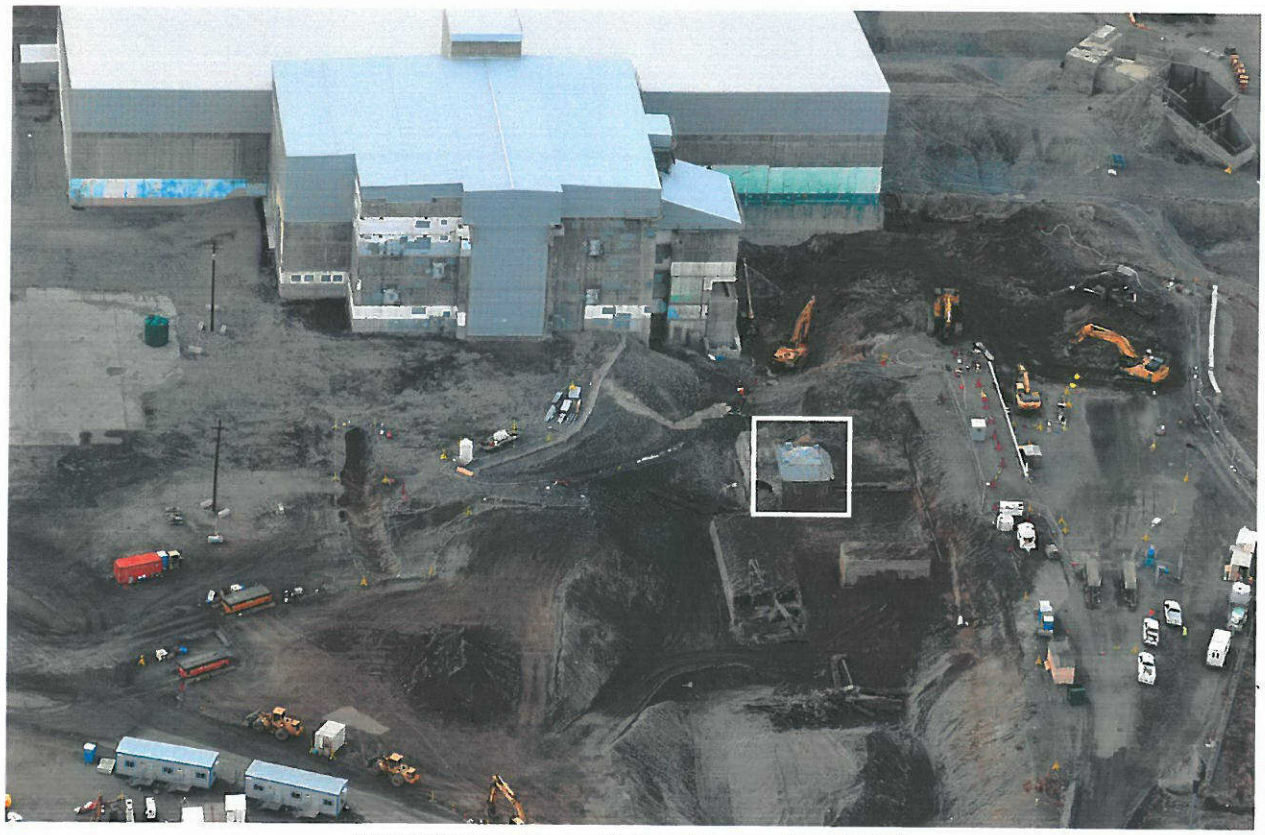
Residual radiological contamination was detected during post-demolition GPERS surveys performed at the footprint of the 105-NE Fission Products Trap. This contamination is being deferred to the 100-N-66 WIDS site, and accordingly, closeout of the 105-NE Fission Products Trap footprint will be addressed during closeout of the 100-N-66 WIDS site. The pertinent GPERS surveys are provided in Attachment 3.

Attachment 2: Photographs (2 Pages)



105-NE Pre-Demolition

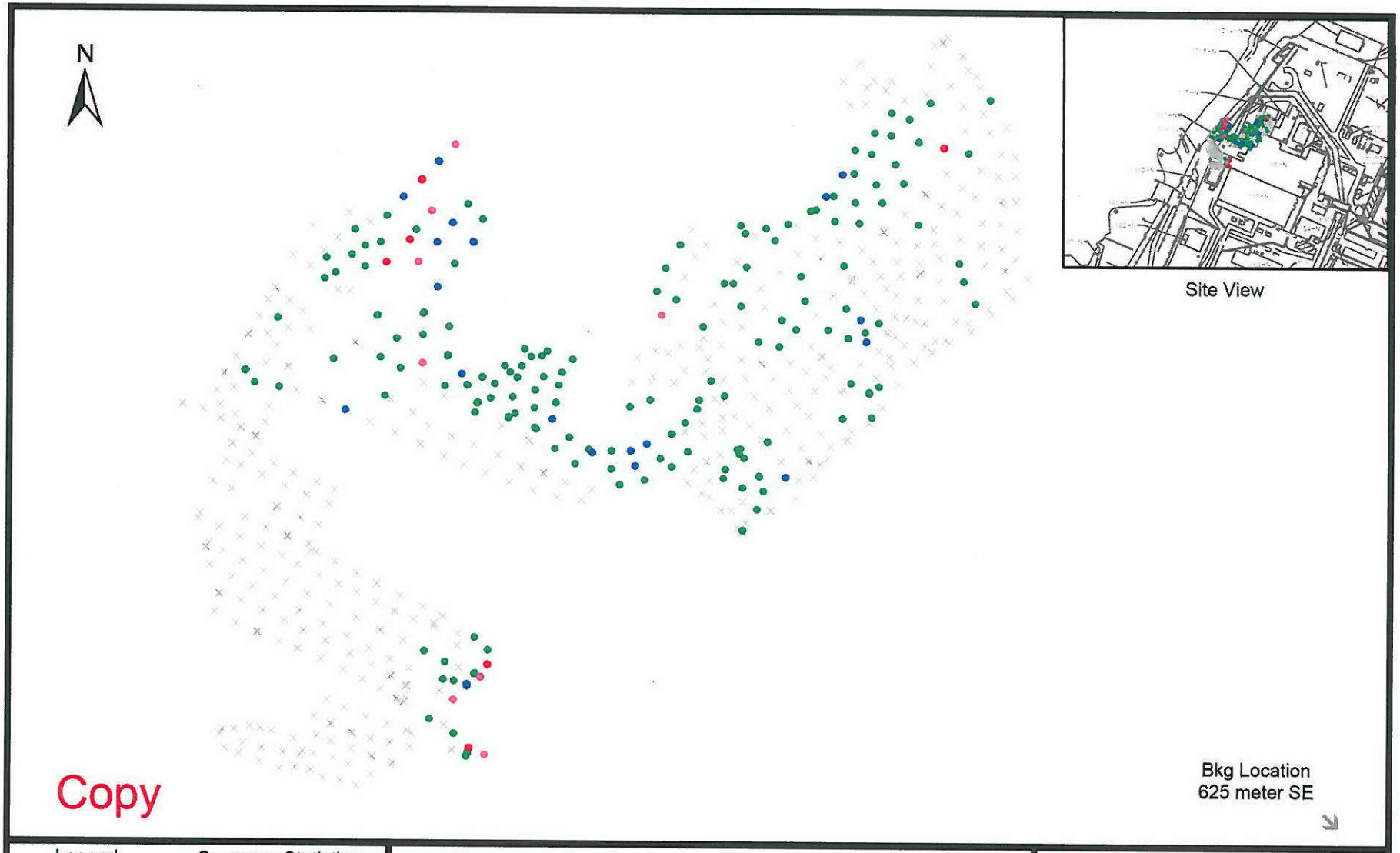
105-NE Pre-Demolition



105-NE Pre-Demolition (December 2011)

105-NE Post-Demolition (September 2012)

Attachment 3: GPERS Surveys (3 Pages)



Legend

NET CPM

- × <1.5x Bkg
- 1.5x Bkg - 5000
- 5000 - 10000
- 10000 - 25000
- 25000

Summary Statistics

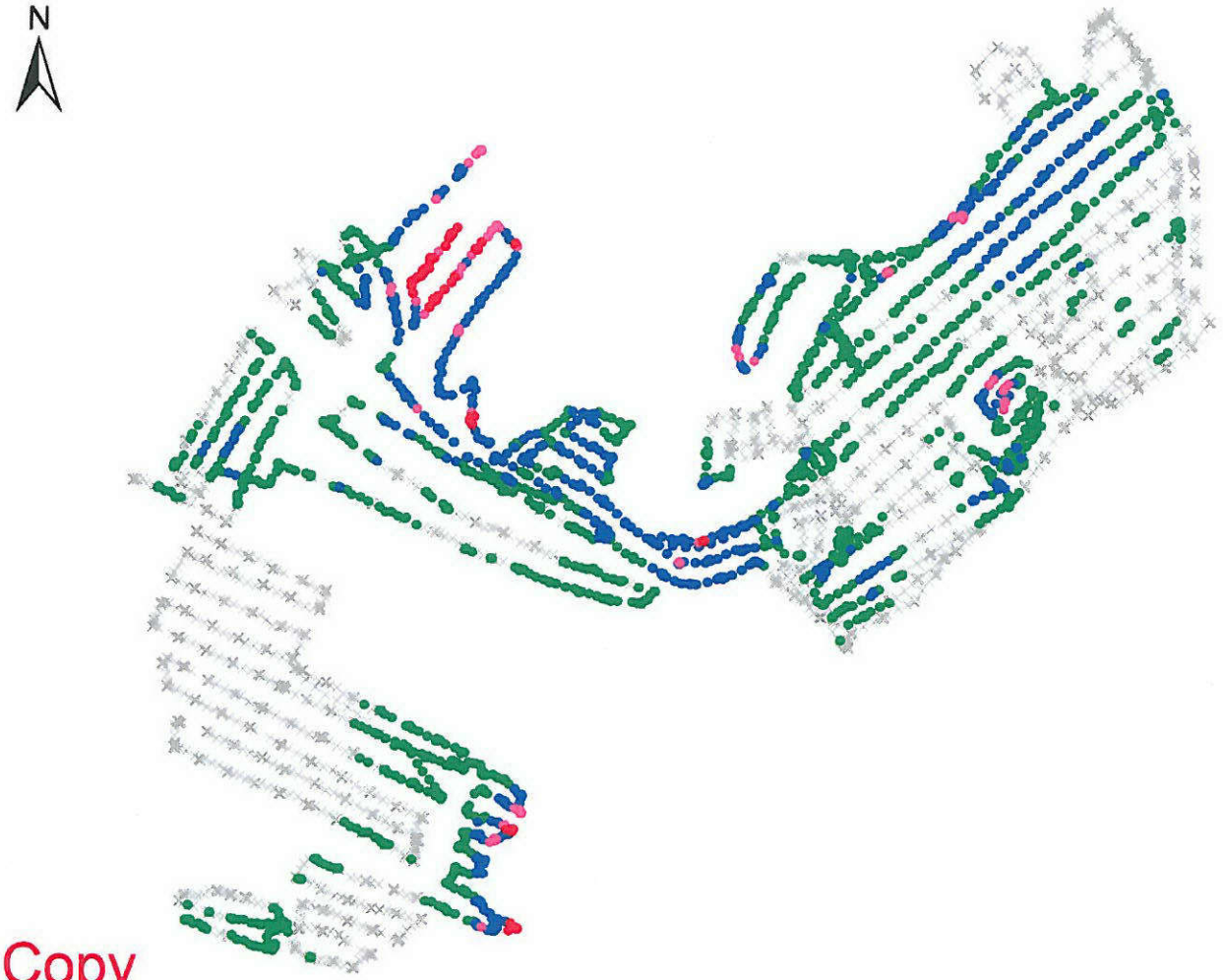
Coverage File: N,NN349, A,B,C
Number of Data Pnts: 652
Type of Survey: beta
Max GCPM: 139,217
Avg Bkg CPM: 401
Survey Date: 12/14/2012
Area Surveyed: 2250 m^2
Project File: ESRFRM120150B
Pdf File: ESRFRM120150BC

100N D4
1303-N Work Zones
GPERS Radiological Survey
Beta Track Map

0 5 10 15 20 25
Meters

EBERLINE SERVICES

Survey Map Prepared By Bruce Coomer, ESI



Site View

Bkg Location
625 meter SE

Legend

NET CPM

- × <1.5x Bkg
- 1.5x Bkg - 10000
- 10000 - 50000
- 50000 - 100000
- >100000

Summary Statistics

Coverage File: N,NN349, A,B,C
Number of Data Pnts: 8717
Type of Survey: Gamma
Max GCPM: 680,272
Avg Bkg CPM: 1327
Survey Date: 12/14/2012
Area Surveyed: 2250 m^2
Project File: ESRFRM120150G
Pdf File: ESRFRM120150GC

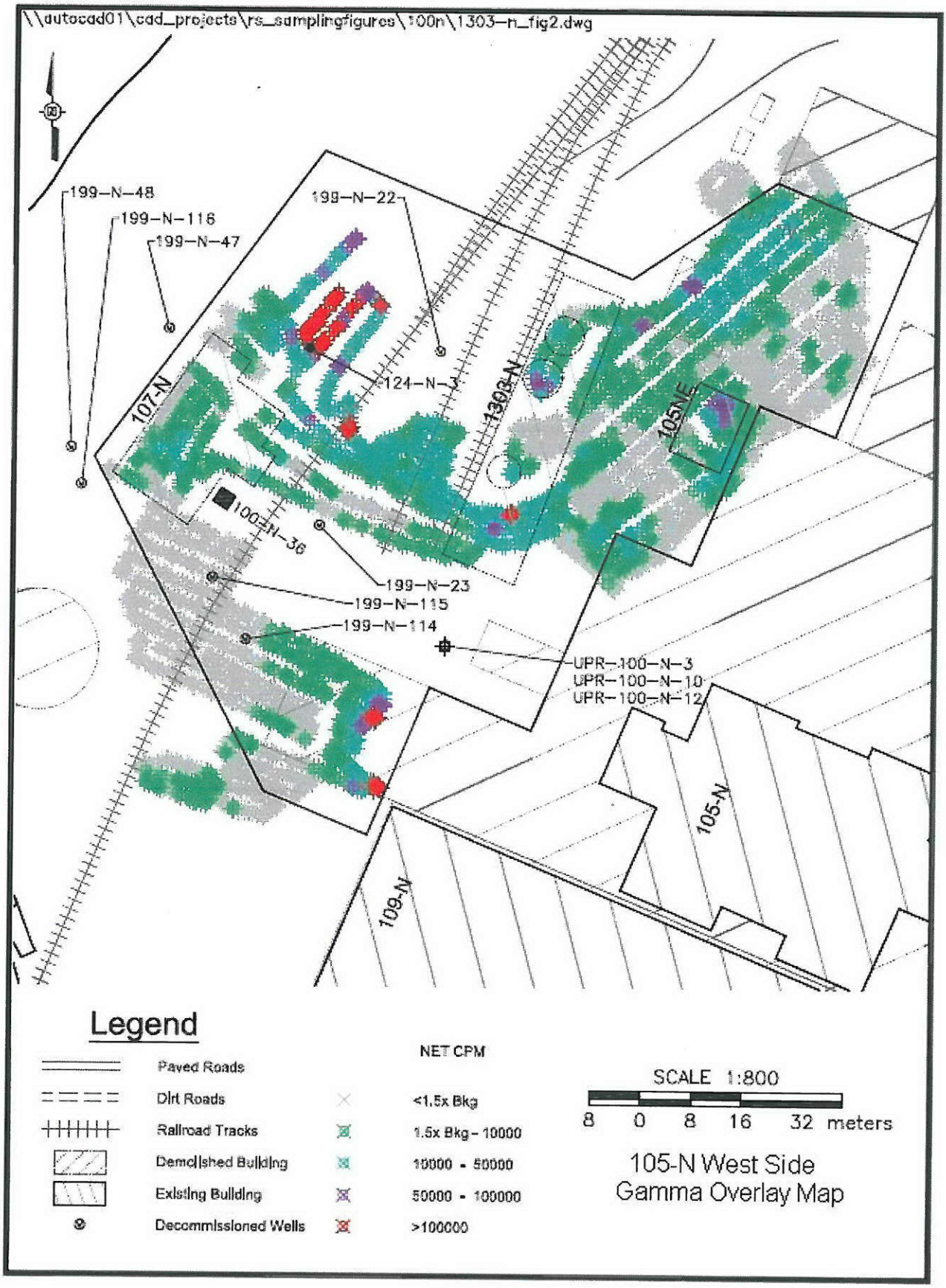
100N D4
1303-N Work Zones
GPERS Radiological Survey
Gamma Track Map

0 5 10 15 20 25 Meters

EBERLINE SERVICES

Survey Map Prepared By Bruce Coomer, ESI

GPERS Gamma Map Location Overlay (for reference purposes only)



Attachment 4: GPS Surveys (6 Pages)

0579175

GPS Survey Data Report for 105NE and 105NA Buildings Pre Demolition

Project : Job 947

User name	maaye	**Date & Time**	5:02:13 PM 12/6/2006
Coordinate System	US State Plane 1983	**Zone**	Washington South 4602
Project Datum	NAD 1983 (Conus)		
Vertical Datum	NAD83	**Geoid Model**	GEOID99 (Conus)
Coordinate Units	Meters		
Distance Units	Meters		
Height Units	Meters		

Survey Project Name/Title: 105NE and 105NA Buildings
Survey Purpose: GPS the area corners and surrounding features for the 105N locations
Requested By: Amy Hood
General Site Location: 100-N
Charge Code:
Field Surveyor: Margo Aye
Computer Software Used: Trimble Survey Controller, and Geomatics Office V.11
Survey Equipment Used: 5800
Control Monuments Used: 100N-4
Survey Method: RTK
Estimated Horizontal Precision: .002m
Estimated Vertical Precision: .005m
Fieldwork Start Date 3/22/06
Completion Date: 3/22/06
Notes: LOGBOOK# EL1571

Name	Northing	Easting	Elevation	Feature Code	Description
680	149580.140m	571182.924m	139.610m	corn-bldg	
682	149569.547m	571186.306m	139.714m	corn-bldg	
681	149572.750m	571179.731m	139.637m	corn-bldg	
683	149577.762m	571189.691m	139.691m	corn-bldg	
1129	149528.942m	571151.584m	139.996m	corner	
340	149527.251m	571153.264m	142.778m	bldg-corn-top	
1131	149526.596m	571157.297m	139.996m	corner	
1132	149524.973m	571150.020m	139.996m	corner	
345	149530.845m	571146.525m	142.443m	bldg-corn-top	

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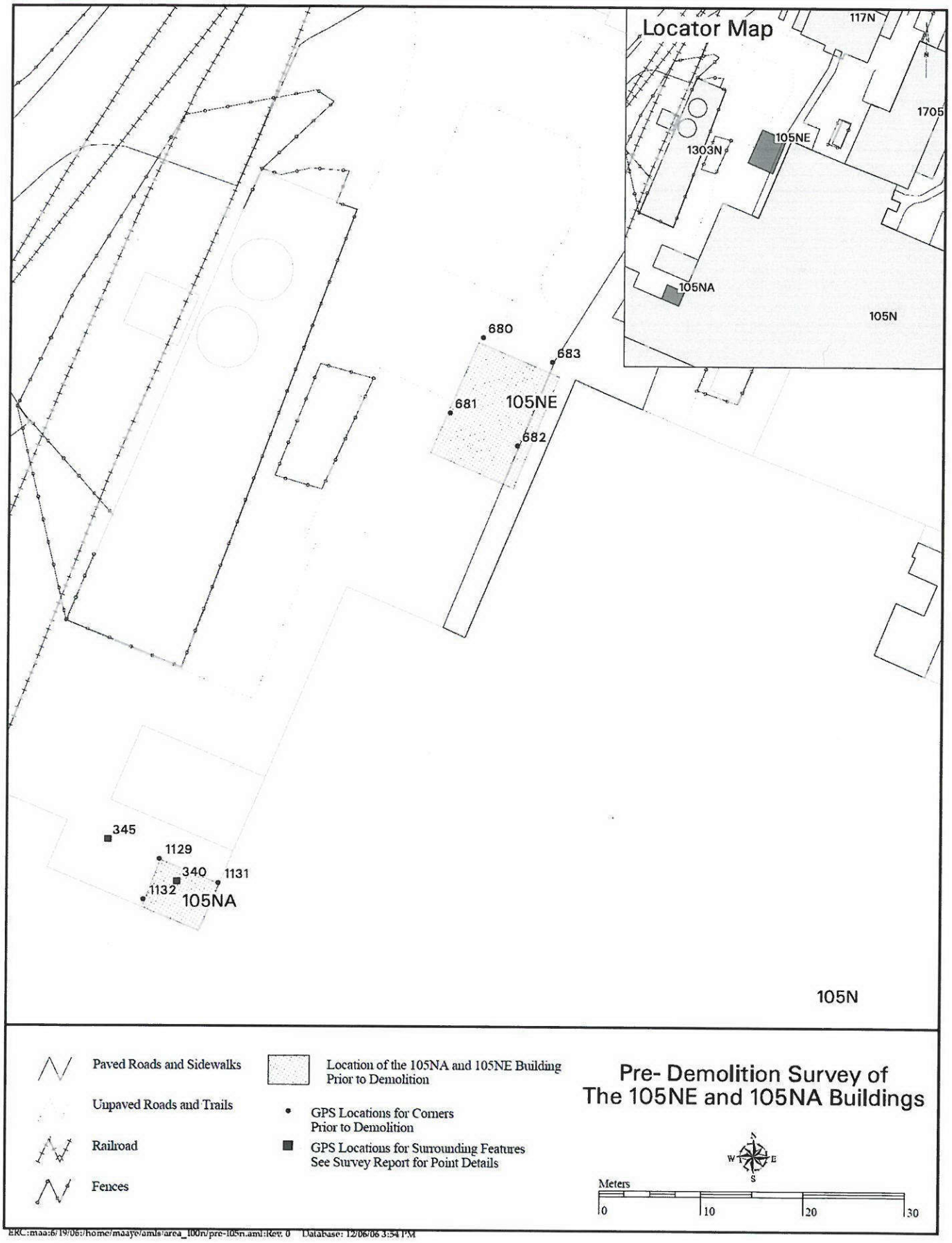

Locator Map
117N
1705
105NE
1303N
105NA
105N
680
683
681
105NE
682
345
1129
340
1131
1132
105NA
105N
Paved Roads and Sidewalks
Unpaved Roads and Trails
Railroad
Fences
Location of the 105NA and 105NE Building Prior to Demolition
GPS Locations for Corners Prior to Demolition
GPS Locations for Surrounding Features See Survey Report for Point Details
Pre- Demolition Survey of The 105NE and 105NA Buildings
N
W
E
S
Meters
0
10
20
30
ERC::maa:6/19/06:/home/maaye/amla/area_100n/pre-105n.aml:Rev: 0 Database: 12/06/06 3:54 PM

0642324

GPS Post Demo Survey for the 105NE Building

Project : 100N-121412

Job 1234

User name	maaye	**Date & Time**	2:58:23 PM 12/18/2012
Coordinate System	US State Plane 1983	**Zone**	Washington South 4602
Project Datum	(WGS 84)		
Vertical Datum	NAVD88	**Geoid Model**	Not selected
Coordinate Units	Meters		
Distance Units	Meters		
Height Units	Meters		

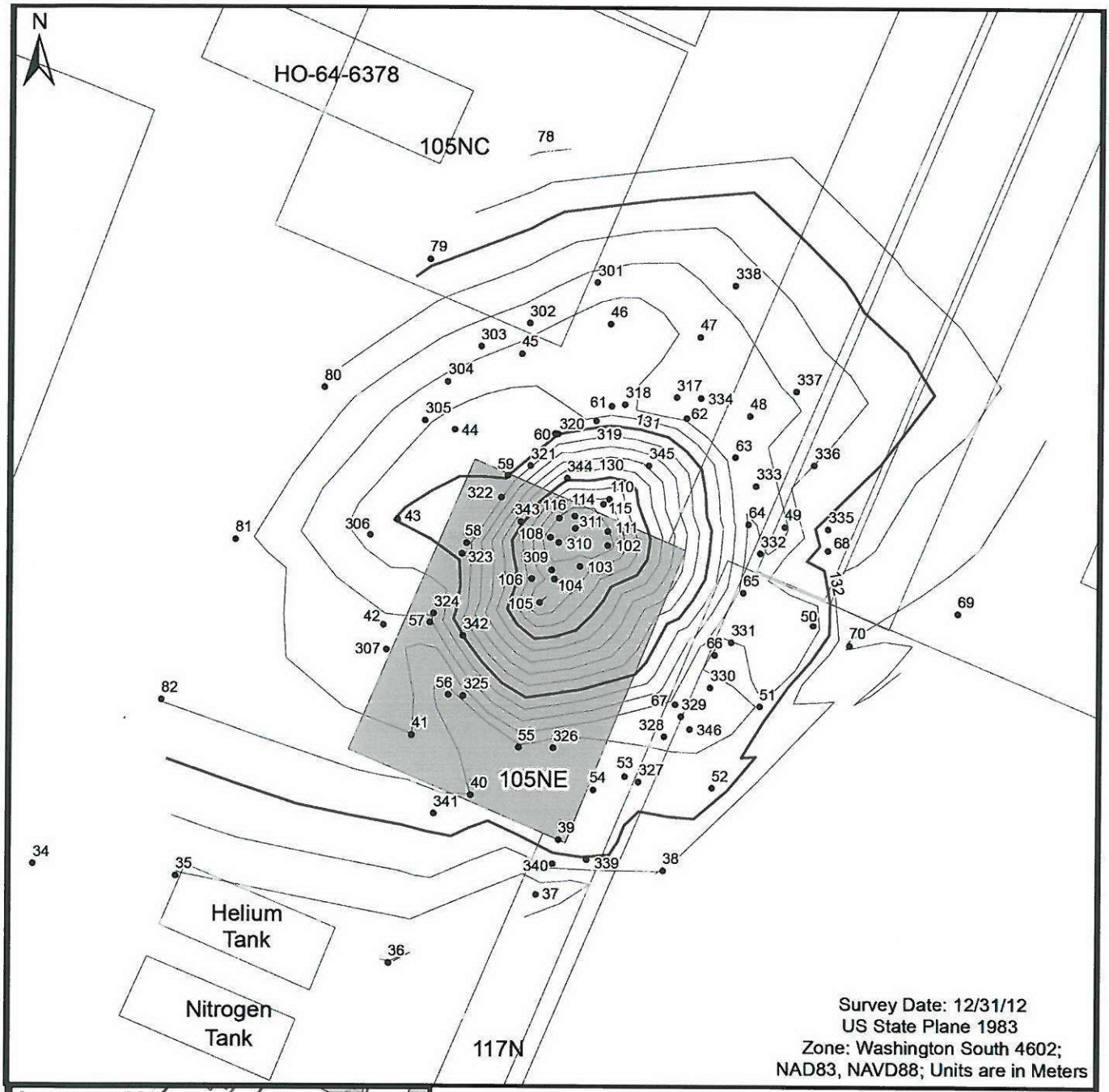
Survey Project Name: Post Demo Survey for 105NE Fission Product Trap
Date: 12/18/2012
Equipment: 5800
Survey Purpose: Map D4 post demo locations
Requested By: Clay McCurley
Location: 100N
Charge Code: R100XXY000
Field Surveyor: Margo Aye
Survey Software Used: Trimble Survey Controller, and Geomatics Office V.11
Survey Equipment Used: 5800
Control Monuments Used: N-2
Survey Method: RTK, & LTI Impulse Laser
Horizontal Precision: .020m
Vertical Precision: .050m
Fieldwork Start Date: 12/14/12
Fieldwork Completion Date: 12/31/12
Notes: I first mapped this on the 14th, but wasn't sure if I truly mapped the toe so I came back two weeks later and shot the toe from the edge. The first data set was true. But I was able to gather more data, so I've combined some of the two surveys.

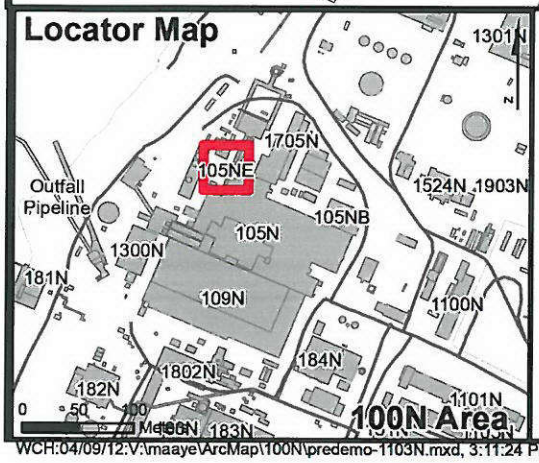
NAME	FEAT_CODE	NORTHING	EASTING	ELEVATION
301	top	149586.287	571187.029	132.008
302	top	149584.761	571184.518	132.080
303	top	149583.886	571182.705	131.974
304	top	149582.570	571181.472	131.988
305	top	149581.115	571180.641	131.877
306	top	149576.836	571178.629	131.615
307	top	149572.549	571179.250	131.852
309	top	149575.541	571185.379	129.196
310	top	149576.579	571185.636	129.270
311	top	149577.101	571186.250	129.241
317	top	149582.002	571190.002	131.575
318	top	149581.732	571188.078	131.449
319	top	149581.103	571187.012	131.289
320	top	149580.632	571185.492	131.136
321	top	149579.428	571184.571	131.167
322	top	149578.250	571183.481	131.072
323	top	149576.153	571182.023	131.120
324	top	149573.910	571181.001	131.452
325	top	149570.835	571182.104	131.627
326	top	149568.895	571185.466	131.633
327	top	149567.653	571188.653	132.090
328	top	149569.339	571189.595	131.930

329	top	149570.089	571190.236	131.859
330	top	149571.168	571191.313	131.812
331	top	149572.863	571192.087	131.889
332	top	149576.178	571193.165	131.725
333	top	149578.697	571192.995	131.636
334	top	149581.967	571190.909	131.537
335	top	149577.096	571195.688	132.382
336	top	149579.490	571195.162	132.325
337	top	149582.244	571194.483	132.423
338	top	149586.180	571192.174	132.517
339	top	149564.725	571186.732	132.331
340	top	149564.577	571185.476	132.665
341	top	149566.442	571181.026	132.492
342	top	149573.077	571182.087	130.858
343	top	149577.349	571184.212	130.266
344	top	149578.973	571185.935	130.172
345	top	149579.451	571188.983	130.648
346	top	149569.609	571190.555	131.941
34	toe	149564.525	571166.131	132.599
35	topo	149564.090	571171.436	132.416
36	topo	149560.855	571179.381	132.608
37	topo	149563.434	571184.860	132.556
38	toe	149564.332	571189.583	132.188
39	toe	149565.471	571185.688	131.825
40	toe	149567.138	571182.406	131.804
41	toe	149569.371	571180.205	131.601
42	toe	149573.467	571179.141	131.450
43	toe	149577.415	571179.634	130.988
44	toe	149580.769	571181.736	131.082
45	toe	149583.623	571184.226	131.333
46	toe	149584.738	571187.536	131.252
47	toe	149584.263	571190.877	131.448
48	toe	149581.315	571192.757	131.448
49	toe	149577.187	571194.070	131.549
50	toe	149573.484	571195.160	131.685
51	toe	149570.470	571193.170	131.807
52	toe	149567.424	571191.390	131.888
53	top-edge	149567.855	571188.139	131.890
54	top-edge	149567.347	571186.980	131.851
55	top-edge	149568.913	571184.180	131.847
56	top-edge	149570.878	571181.559	131.898
57	top-edge	149573.570	571180.859	131.434
58	top-edge	149576.539	571182.204	130.884
59	top-edge	149579.066	571183.722	131.005
60	top-edge	149580.620	571185.586	131.004
61	top-edge	149581.675	571187.579	131.380
62	top-edge	149581.231	571190.381	131.441
63	top-edge	149579.765	571192.216	131.530
64	top-edge	149577.266	571192.723	131.614
65	top-edge	149574.716	571192.525	131.670

66	top-edge	149572.392	571191.473	131.850
67	top-edge	149570.536	571190.004	131.678
68	topo	149576.302	571195.683	132.109
69	toe	149573.959	571200.554	132.516
70	toe	149572.768	571196.508	132.414
78	topo	149591.279	571184.743	132.425
79	topo	149587.140	571180.803	132.039
80	topo	149582.338	571176.882	131.754
81	topo	149576.658	571173.588	131.677
82	topo	149570.664	571170.866	131.791
102	toe	149576.462	571187.474	129.314
103	toe	149575.675	571186.433	129.456
104	toe	149575.194	571185.490	129.513
105	toe	149574.323	571184.936	129.387
106	toe	149575.213	571184.644	129.720
108	toe	149576.750	571185.341	129.247
110	toe	149578.200	571187.518	129.585
111	toe	149576.994	571187.460	129.373
114	center	149577.557	571186.231	129.209
115	center	149578.015	571187.294	129.493
116	center	149577.486	571185.660	129.364

Back to top





GPS Post Demo Survey Report For 105NE Building

- GPS Point Locations
- Major Contour 2.5 Meter Interval
- Minor Contour .5 Meter Interval
- 105NE Building Location (Pre-Demo)
- Historic Building Locations

0 5 10 20 Meters

Attachment 5: Sampling Determination Form for the 105-NE Fission Products Trap (SDF-100N-022, Rev. 1)
(8 Pages)

100-N ANCILLARY FACILITIES REMOVAL ACTION SAMPLING DETERMINATION FORM

Determination Number
SDF-100N-022, Rev. 1

A. INSTRUCTIONS

This form must be completed to: 1) document existing data in order to determine if current data is suitable to prove completion of 100-N Ancillary Facilities, or 2) document that site-specific sampling and analyses are needed to provide completion for 100-N Ancillary Facilities.

B. GENERAL INFORMATION

Building Name: Fission Products Trap (FPT) Building Number: 105-NE (also referred to as 1305-N)

WIDS Sites Associated or Adjacent:
Associated:
- 100-N-63:2 (Accepted Classification Status)
- 100-N-84:5 (Accepted Classification Status)
- UPR-100-N-39 (Accepted Classification Status)

Adjacent:
- 100-N-66 (Accepted Classification Status)
- 100-N-84:3 (No Action Reclassification Status)

Other:
The 105-NE FPT was used to remove solids from the low-pressure flush line and the low-pressure diversion effluent line (BHI-01110 pg. 1). Removed solids were collected in piping within the 105-NE FPT and were able to be transferred to a cask for removal from the facility (BHI-01110 pg. 2). No evidence suggests that solids were ever removed from the 105-NE FPT (BHI-01110 pg. 1). It was demolished by the D4 organization in April of 2012 and the excavation required for its removal remains open as of February 2013.

As detailed in this form, radiological contamination was identified within the soil underlying, and adjacent to, the footprint of the 105-NE FPT following its demolition. Accordingly, the contamination remaining within the facility footprint is being deferred to the 100-N-66 WIDS site.

C. INFORMATION SOURCES

Available information (list document number for each if applicable):

Historical Site Assessment: N/A

Site Walkdown: N/A

IH Characterization Report: N/A

Radiological Survey: Global Positioning Environmental Radiological Surveyor (GPERS) Surveys:
- ESR-FRM-12-0150BC
- ESR-FRM-12-0150GC

IHC/FHC Document: 105-NE Fission Products Trap and 1305-N Piping Preliminary Hazard Classification: BHI-01110

WIDS/SIS: Stewardship Information System (SIS) Facility Summary Report for 105-NE

PDSR: N/A

Facility Inspection: N/A

Waste Characterization Checklist: N/A

Summary Report: N/A

Other:
- 100-N Technical Manual Volume 2 (background information only): HW-69000
- Calculation of Radionuclides in 105-NE, 1305-N, and 1304-N: 0100N-CA-N0025
- Calculation of 105-N & 109-N Initial Hazard Categorization for ISS: 0100N-CA-N0068
- Fission Product Trap (FPT) Water Removal: CCN 030417
- Figure 1 GIS Site Tool for 105-NE: (attached to this form)
- GPERS Beta Map Location Overlay: (attached to this form)
- GPERS Gamma Map Location Overlay: (attached to this form)
- Radiological Survey Records: RSR-100N-12-0812 & RSR-100N-12-0825
- Work Package to Remove Cyclone Separator from 105NE and Ship to ERDF, Prepare FPT for Demo: 100 09 09 08 041

---------- Facility Photographs ----------

- Pre-Demolition Facility Photographs, Time-Stamped: SIS Facility Summary Report for 105-NE pg. 5 (6/11/2002)

100-N ANCILLARY FACILITIES REMOVAL ACTION SAMPLING DETERMINATION FORM

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• Pre-Demolition Facility Photographs, No Time Stamp: SIS Facility Summary Report for 105-NE pgs. 3 & 4

D. HAZARDOUS SUBSTANCES

Check all that apply:

☐ None ☐ Asbestos containing material ☐ Lead ☐ PCBs/PCB Articles ☐ Oils/Greases

☐ Chemicals List: _____

☒ Radiological Contamination ☐ Mercury/Mercury Devices

☐ Other: _____

References/Comments:
Radiological Contamination:
- Water in the 105-NE facility (CCN 030417, 0100N-CA-N0025 sect. 4.1.4, and BHI-0110 pg. 2)
- Sediment and/or fuel fragments in the 105-NE facility piping (0100N-CA-N0025 sects. 4.1.3, 4.1.4, and Attachment 2; BHI-01110 pg. 2)
- Contaminated soil within the 105-NE footprint (RSR-100N-12-0812, RSR-100N-12-0825, ESR-FRM-12-0150BC, ESR-FRM-12-0150GC, GPERS Beta Map Location Overlay [attached to this form], and GPERS Gamma Map Location Overlay [attached to this form])

Liquids: ☒ Yes ☐ No

If yes, describe source and nature of liquids:
The 105-NE FPT contained an estimated 3,600 gallons of water in addition to an estimated 3,204 gallons of water in the connected piping (0100N-CA-N00025 sects. 4.1.1, 4.1.2, and Attachment 1). All such water is presumed to have been radiologically-contaminated (0100N-CA-N0025 sects. 4.1.1 & 4.1.2).

Were the hazardous substances removed from the facility prior to demolition? ☐ Yes ☒ No

As verified by what documentation:
The only hazardous substance that appears to have been associated with the 105-NE facility was radiological contamination present in both the facility water and piping. Due to its nature, the contamination was not removed prior to demolition, but was fixed with Zeolite/Bentonite and grout prior to demolition (100 09 09 08 041 WCH Task Instruction pgs. 14 & 16).

Was there potential for hazardous substances to be introduced into the soils during facility operations or demolition? ☒ Yes ☐ No ☐ N/A

References/Comments:
The 105-NE FPT contained radiologically-contaminated water and sediment that was not removed prior to demolition (100 09 09 08 041 WCH Task Instruction pgs. 14 & 16). Accordingly, there was potential for the adjacent soil to become contaminated during facility operations and demolition. It was believed that the radiologically-contaminated contents of the facility would have been contained within the facility as a result of the facility's concrete walls, which were thought to be sufficient to prevent contained liquids from entering the exterior environment (0100N-CA-N0025 Attachment 2). Nevertheless, radiological contamination was discovered within, and adjacent to, the facility footprint following facility demolition (ESR-FRM-12-0150BC, ESR-FRM-12-0150GC, GPERS Beta Map Location Overlay [attached to this form], and GPERS Gamma Map Location Overlay [attached to this form]).

List any hazardous materials left in the building for demolition:
Prior to demolition, the contaminants in the water and piping were fixed with Zeolite/Bentonite and grout, respectively (100 09 09 08 041 WCH Task Instruction pgs. 14 & 16)

Does review of historical records and process knowledge indicate a potential for radiological or chemical contamination to be present in the facility?
Radiological: The chief cause for environmental concern related to this facility is the large amount of radiologically-contaminated water that was present within the facility. Post-demolition radiological surveys identified radiological contamination within the 105-NE footprint (RSR-100N-12-0812, RSR-100N-12-0825, ESR-FRM-12-0150BC, ESR-FRM-12-0150GC, GPERS Beta Map Location Overlay [attached to this form], and GPERS Gamma Map Location Overlay [attached to this form]).

Chemical Contamination: The 105-NE FPT was not designed for chemical usage and no information was found to suggest that chemicals were used within the facility (BHI-01110 pg. 3).

100-N ANCILLARY FACILITIES REMOVAL ACTION SAMPLING DETERMINATION FORM

Determination Number
SDF-100N-022, Rev. 1

Comments:
The radionuclide inventory of the 105-NE FPT was included in a calculation for 105-N and 109-N initial hazard categorization (0100N-CA-N0068 Table 6-2).

Pertinent design drawings include H-1-28397, H-1-28447, and H-1-28465.

E. FIELD OBSERVATIONS

Visual Inspection

Were any stained soils/anomalies discovered during or after demolition of the facility? ☐ Yes ☒ No

References/Comments:
No record was found to indicate that any stained soil or anomaly was discovered within the vicinity of the 105-NE FPT following demolition.

Were samples taken of the stained soils/anomalies? ☐ Yes ☐ No ☒ N/A

References/Comments:
As no stained soil or anomaly appears to have been discovered, this question is not applicable.

Do results of the samples indicate that chemical contamination exists? ☐ Yes ☐ No ☒ N/A

References/Comments:
N/A

Is the area potentially a discovery site? ☒ Yes ☐ No

References/Comments:
Refer to the Radiological Surveys section below.

Radiological Surveys

Did radiological surveys (GPERS or equivalent) identify contamination? ☒ Yes ☐ No

References/Comments:
Two reviewed work progress radiological survey records identified an elevated level of radiological contamination at the 105-NE FPT (RSR-100N-12-0812 & RSR-100N-12-0825). Additional radiological survey records pertaining to the 105-NE FPT exist, but were not reviewed during generation of this form. It is worth noting that the 105-NE FPT was expected to contain substantially-elevated radiological levels (BHI-01110 sects. 3.0 & 4.0, 0100N-CA-N0025 sects. 4.1.2, 4.1.4, and Attachment 2). Furthermore, final post-demolition GPERS surveys identified an elevated level of radiological contamination within, and adjacent to, the facility footprint (ESR-FRM-12-0150BC, ESR-FRM-12-0150GC, GPERS Beta Map Location Overlay [attached to this form], and GPERS Gamma Map Location Overlay [attached to this form]).

Were samples taken of the radiologically contaminated soils? ☒ Yes ☐ No ☐ N/A

References/Comments:
A sample of wet sediment was removed from the 105-NE FPT for analysis (sample number J12669). Analysis of this sample revealed that an elevated level of radiological contamination existed within the sediment. The sediment and water were stabilized with Zeolite/Bentonite and grout prior to demolition of the 105-NE FPT.

Is the area potentially a discovery site? ☒ Yes ☐ No

References/Comments:
Post-demolition GPERS surveys identified an elevated level of radiological contamination within, and adjacent to, the facility footprint (ESR-FRM-12-0150BC, ESR-FRM-12-0150GC, GPERS Beta Map Location Overlay [attached to this form], and GPERS Gamma Map Location Overlay [attached to this form]).

Were the contaminated materials removed? ☐ Yes ☒ No ☐ N/A

References/Comments:
The contamination was identified after the 105-NE FPT had been removed. Accordingly, the contamination remains within, and adjacent to, the footprint of the 105-NE FPT.

F. WIDS SITES

Were there any WIDS sites affected by D4 activities? ☒ Yes ☐ No

100-N ANCILLARY FACILITIES REMOVAL ACTION SAMPLING DETERMINATION FORM

Determination Number
SDF-100N-022, Rev. 1

If yes, list the WIDS sites:
Physical portions of 100-N-63:2 and 100-N-84:5 that fell within the layback of the excavation required to remove the 105-NE FPT were removed. Additionally, it should be noted that the D4 organization removed multiple pipelines and waste sites in this area that fell within the laybacks of the excavations for other structures. By default, the D4 organization has removed most of the piping and waste sites between the 105-N Reactor and the steep incline that breaks down to the Columbia River.

Were the WIDS site(s) completely removed? ☐ Yes ☒ No

References/Comments:
Physical portions of 100-N-63:2 and 100-N-84:5 that fell within the excavation layback were removed.

Will the Ancillary Facility Footprint be deferred to FR to be closed out with a co-located Waste SIte? ☒ Yes ☐ No

References/Comments:
Final GPERS surveys performed after D4 removal of the 105-NE FPT identified considerable contamination remaining within, and adjacent to, the footprint of the 105-NE FPT. Accordingly, the contamination remaining within the facility footprint is being deferred to the 100-N-66 WIDS site.

G. COPCs FOR SOILS AND STRUCTURES REMAINING AFTER DEMOLITION

What are the potential contaminants of concern for the remaining below-grade soil?

☐ None ☐ SVOC ☐ VOC ☐ Metals ☐ TPH ☒ Rad ☐ PCBs

☐ Other (Specify): _____

Comments:
N/A

Summary of in-process soil sampling requirements:
N/A

Constituents detected / concentrations / rationale
Consult analysis results of the Sample Collection Summary below.

Sample Collection Summary
HEIS Sample Number: J12669 (SIS Facility Summary Report for 105-NE). Analysis of the sample revealed that an elevated level of radiological contamination existed within the sediment. The sediment and water were stabilized with Zeolite/Bentonite and grout prior to demolition. The material was demolished and loaded out with the 105-NE facility demolition debris.

H. NOTES / ADDITIONAL INFORMATION

☒ Check here if additional information / data / maps / sketches are attached to this form.

If checked, list the attachment(s):
- Figure 1 GIS Site Tool for 105-NE
- GPERS Beta Map Location Overlay
- GPERS Gamma Map Location Overlay

I. SAMPLING

Are soil samples required to demonstrate that remaining structure or below-grade soils meet cleanup standards? ☐ Yes ☒ No

Based on the above information it was determined that sampling: ☐ will ☒ will not be required in order to demonstrate that cleanup criteria have been met.

100-N ANCILLARY FACILITIES REMOVAL ACTION SAMPLING DETERMINATION FORM

Determination Number
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The individual below acknowledges that the review of this facility has been completed. He or she also commits to provide to the Department of Energy (DOE) and the Washington State Department of Ecology (Ecology) any available information that could alter the sampling decision established in this form.

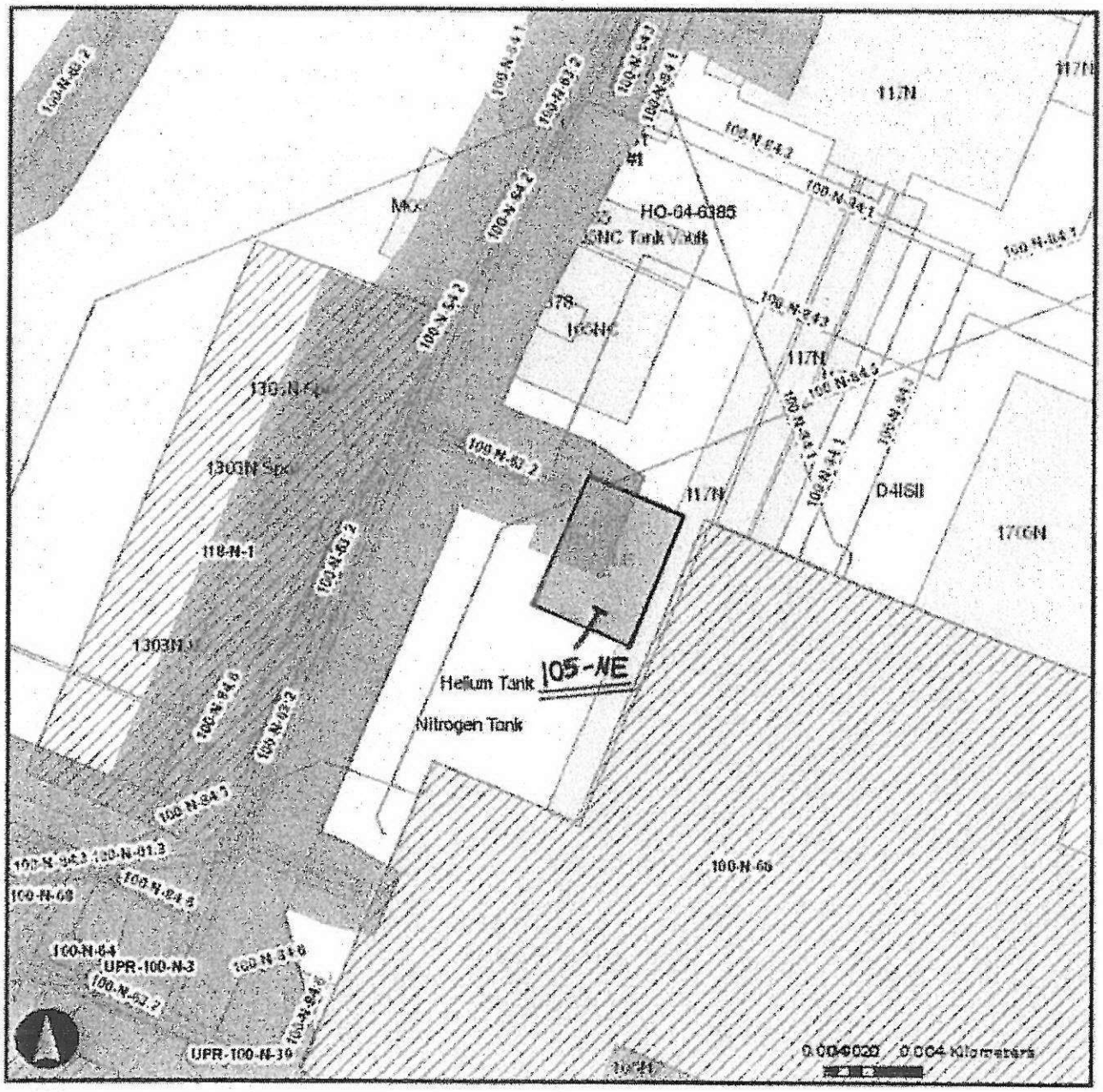
Information Reviewer Signature	Printed Name	Date
David Warren	David Warren	3/4/13

The regulatory representative below agrees with the decision outlined in section I of this form for the indicated facility and supports implementation of that decision based on the information currently available.

DOE Signature	Printed Name R. F. Garcia	Date 3/4/13
Ecology Signature	Printed Name Rick Bond	Date 3/13/13

Figure 1
GIS site tool map for
105-NE

Map



Buildings

WasteSitePoints

- Sitecode Missing in SIS
- Accepted,
- Accepted, Closed Out
- Accepted, Consolidated
- Accepted, Interim Closed Out

WasteSitesLine (continued)

- Accepted, No Action
- Accepted, Rejected
- Discovery,
- Not Accepted,

WasteSitePolys

- Sitecode Missing in SIS
- Accepted,

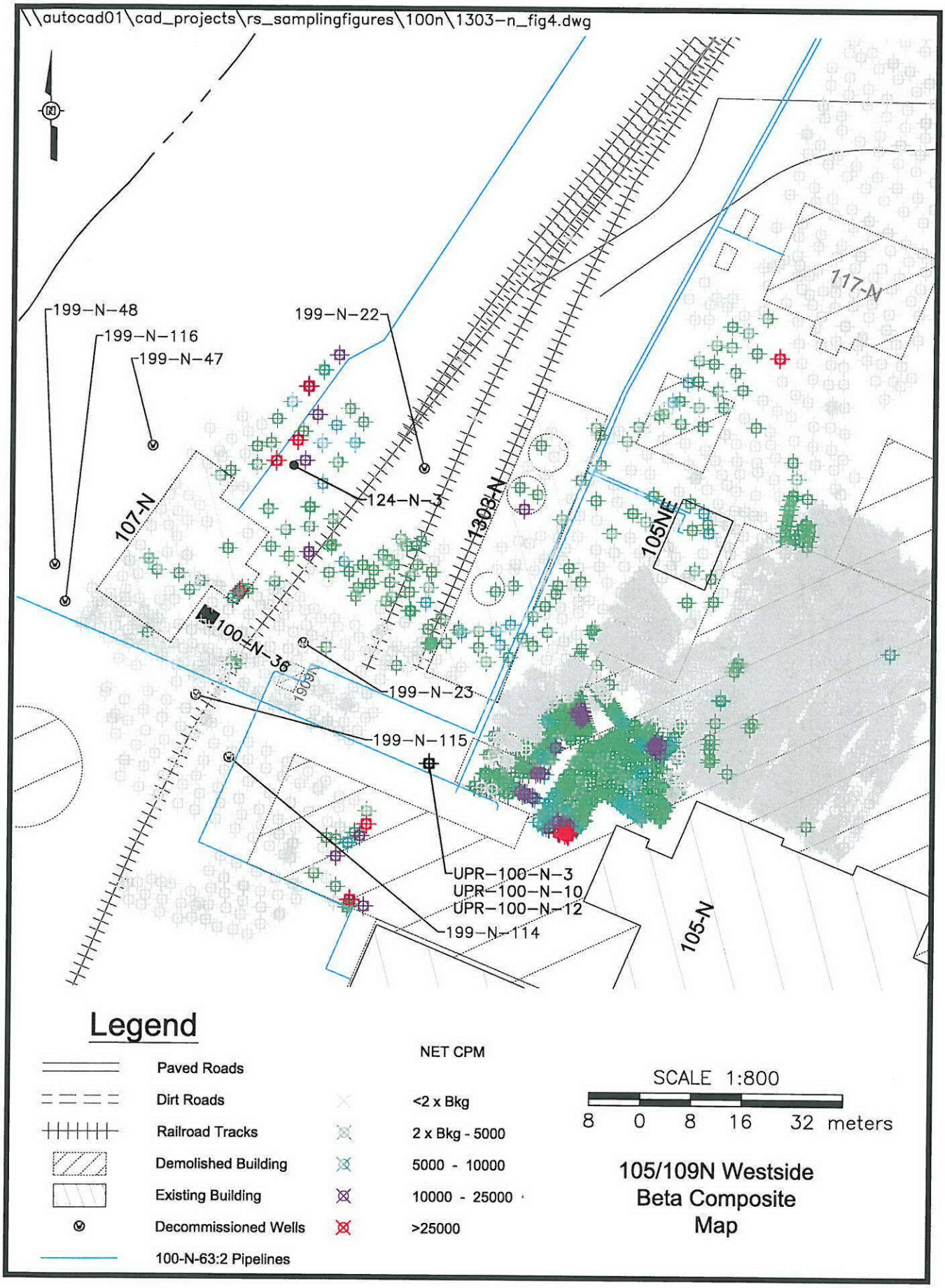
Waste Polygon Labels

Waste Line Labels

Waste Point Labels

N_EXC_Toe

N_EXC_Daylight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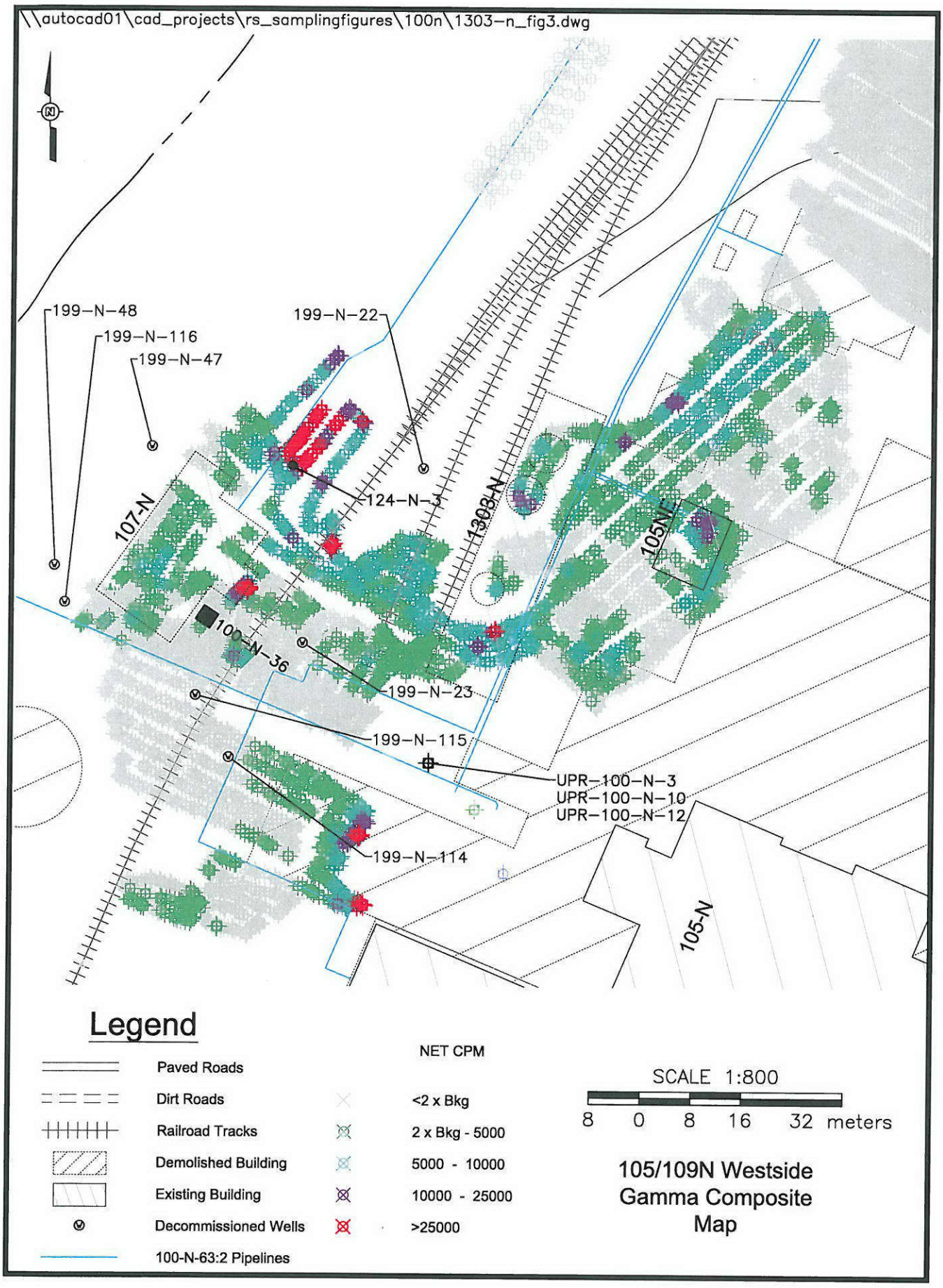
199-N-47
199-N-22
124-N-3
107-N
1303-N
105NE
117-N
100-N-36
1905
199-N-23
199-N-115
UPR-100-N-3
UPR-100-N-10
UPR-100-N-12
199-N-114
105-N
Legend
Paved Roads
Dirt Roads
Railroad Tracks
Demolished Building
Existing Building
Decommissioned Wells
100-N-63:2 Pipelines
NET CPM
<2 x Bkg
2 x Bkg - 5000
5000 - 10000
10000 - 25000
>25000
SCALE 1:800
8 0 8 16 32 meters
105/109N Westside
Beta Composite
Map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107-N
1303-N
105NE
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